

Notice of Allowability

Application No.

10/015,369

Examiner

Barry W. Taylor

Applicant(s)

MARUYAMA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/7/07.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-11 are allowed.
2. The following is an examiner's statement of reasons for allowance.

Prior art of record fails to teach or fairly suggest a parallel operation system of transmission amplifiers, comprising: first and second transmission amplifier units which receive a common input signal and output respective amplified signals; and a coupling unit which combines outputs of the first and second transmission units, to provide as its output; the first and second transmission amplifier units each including: a main amplifier; and a modulation unit disposed on the input side of the main amplifier; wherein the output of either one of the modulation units included in the first and second transmission amplifier units is fed commonly to the main amplifiers included in the first and second transmission amplifier units as recited in independent claim 1.

Prior art of record fails to teach or fairly suggest a parallel operation system of transmission amplifiers, comprising: first and second transmission amplifier units which receive a common input signal, and output respective amplified signals; and a coupling unit which combines outputs of the first and second transmission amplifier units, to provide as its output; the first and second transmission amplified units each including: a main amplifier; a digital pre-distorter disposed on the input side of the main amplifier, for creating distortion anticipated values of the main amplifier to add them to the input signals; a quadrature modulator which quadrature modulates the output of the digital pre-distorter; and an up-converter having a local oscillator, for converting the output

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frequencies of the quadrature modulator; wherein the output of file up-converter included in one of the first and second transmission amplifier units is fed commonly to the main amplifiers included in the first and second transmission amplifier units as recited in independent claim 3.

Prior art of record fails to teach or fairly suggest a parallel operation system of transmission amplifiers, comprising: first and second systems each having a digital pre-distorter which receives digital signals, having a D/A converter which converts the output of the digital pre-distorter into an analog signal, and having a main amplifier to amplify the outputs of the D/A converter; a coupling unit which combines the outputs of the main amplifiers of the first and second systems; and a feedback system including an A/D converter which converts the output of the coupling unit into a digital signal, wherein the output of the A/D converter included in the feedback system is fed back to the digital pre-distorters of the first and second systems, and wherein the digital pre-distorters of the first and second systems create distortion anticipated values of the main amplifiers as a function of the fed back output level of the coupling unit and add them to the inputted analog signals, for output as recited in independent claim 10.

Prior art of record fails to teach or fairly suggest a parallel operation system of transmission amplifiers, comprising: first and second systems each having a pre-distorter which receives analog signals, having an up-converter which multiplies the output of the pre-distorter up to a predetermined frequency, and having a main amplifier which amplifies the output of the up-converter; a coupling unit which combines the outputs of the main amplifiers of the first and second systems; and a feedback system

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including a down-converter which reduces the output of the coupling unit into a predetermined frequency, wherein a common reference signal is fed to both the up-converter and the down-converter, and wherein the output of the down-converter included in the feedback system is fed back to the pre-distorters of the first and second systems, and wherein the pre-distorters of the first and second systems create distortion anticipated values of the main amplifiers as a function of the fed back output level of the coupling unit and add them to the inputted analog signals, for output as recited in independent claim 11.

Support for the Examiner's reasons for allowance can be found on pages 10 – 14, paper dated 2/13/2007.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor, telephone number (571) 272-7509, who is available Monday-Thursday, 6:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost, can be reached at (571) 272-7872. The central facsimile phone number for this group is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571) 272-2600.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Centralized Delivery Policy: For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the central fax number (571-273-8300).

Barry W. Taylor
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 3/15/07
BARRY TAYLOR
PRIMARY EXAMINER